

U.S. Rural electrification administration.
A handbook of work plans for the use of
electricity in the farm home.

Reserve

1.933

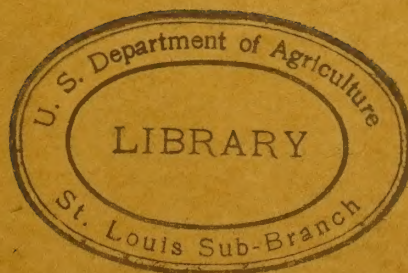
H19

A HANDBOOK OF WORK PLANS FOR THE USE OF
ELECTRICITY IN THE FARM HOME

This handbook was developed as a practical
guide for home demonstration agents in
studying and selection, operation and care
of household electrical appliances in a
Rural Electrification training school.

United States Department of Agriculture
Rural Electrification Administration
Washington, D.C.

2195A



UNITED STATES
DEPARTMENT OF AGRICULTURE
LIBRARY



Reserve

BOOK NUMBER 1.933
H19

578869

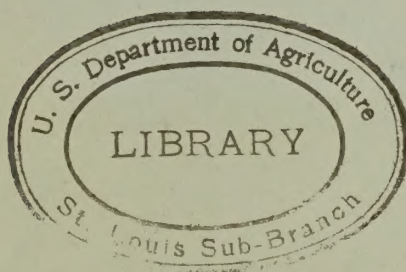
QVO 8-7871

REA

RURAL ELECTRIFICATION ADMINISTRATION
Library

A HANDBOOK OF WORK PLANS FOR THE USE OF
ELECTRICITY IN THE FARM HOME

This handbook was developed as a practical guide for home demonstration agents in studying the selection, operation and care of household electrical appliances in a rural electrification training school.



United States Department of Agriculture
Rural Electrification Administration
Washington, D. C.

U.S.D.A.
LIB

2195A

AD8U
8U

ELECTRICITY IN THE FARM HOME

The following discussion of the factors that must be considered in planning for the best use of electricity as a unit is given here as an introduction to this workbook on the practical uses of electricity in the farm home.

Rural electrification has increased the demands for more extensive use of electricity in the home and on the farm both from the social and productive standpoints. This has brought rural families face to face with many new problems with which they will need special help and guidance, if they are to enjoy the benefits the full use of electricity can provide.

The successful use of electricity on the farm is dependent upon several factors. First and perhaps the most important is the planning for uses of electricity for the farm as a whole, which will mean a more widespread and intelligent application of the labor saving and income producing electrical equipment to the farm and home practices. Second, the planning of the wiring to allow for those uses, and third, information that will help the new rural users with the selection, operation and care of the equipment.

Planning for the wise use of electricity in the home and on the farm involves:

1. An analysis of the various farm activities and the practical adaptation of the use of electricity to these activities.
2. Planning for the convenient and profitable use of electrical equipment, and working out a buying program.

FEB 12 '46

The following is a summary of the findings of the investigation conducted by the Department of Defense, Office of the Inspector General, in response to the request for information regarding the activities of the [redacted] in the [redacted] area.

During the investigation, it was determined that the [redacted] had been engaged in a series of activities designed to [redacted] the [redacted] and to [redacted] the [redacted] of the [redacted] area. These activities included [redacted] the [redacted] of the [redacted] and the [redacted] of the [redacted] area.

The results of the investigation indicate that the [redacted] had been engaged in a series of activities designed to [redacted] the [redacted] and to [redacted] the [redacted] of the [redacted] area. These activities included [redacted] the [redacted] of the [redacted] and the [redacted] of the [redacted] area.

It is recommended that the [redacted] be [redacted] and that the [redacted] be [redacted] to the [redacted] of the [redacted] area.

The following is a summary of the findings of the investigation conducted by the Department of Defense, Office of the Inspector General, in response to the request for information regarding the activities of the [redacted] in the [redacted] area.

During the investigation, it was determined that the [redacted] had been engaged in a series of activities designed to [redacted] the [redacted] and to [redacted] the [redacted] of the [redacted] area. These activities included [redacted] the [redacted] of the [redacted] and the [redacted] of the [redacted] area.

It is recommended that the [redacted] be [redacted] and that the [redacted] be [redacted] to the [redacted] of the [redacted] area.

3. Planning the wiring layout to cover the individual farm needs and the selection of wiring material to meet these requirements.
4. The selection of a reliable wiring contractor.
5. The selection of lighting fixtures and lamps, and farm and home equipment to meet the needs planned.
6. Learning to use and care for the equipment efficiently.
7. Making adjustments in the farm and home program, so as to realize the greatest economic return from the electrical equipment installed for in "2" and "3."

This initial study of the farm and home activities should include an estimate of the present expenditures made in connection with these practices. The cost of electricity should not be considered a totally new expenditure but should be compared with the cost of the present methods being used. Consideration should be given to the following points:

1. That the new service which electricity brings into the home removes much of the hard work from household and farm tasks with a great saving of time and energy, thus increasing family comforts and leisure.
2. That electricity may be used to increase the farm and home income in many ways, and offers a means of developing new farm enterprises.

This analysis of the farm and home activities should be used as a basis for working out a buying program, which should extend over a period of three to five years. Such a program is valuable in that it serves as a guide in getting a wiring installation that will allow for new and increased uses of electricity without additional wiring costs, and in purchasing the most needed appliances first.

Planning the wiring and lighting layouts, the selection of lighting fixtures and lamps, and the selection, use and care of farm and

1. Planning the lighting layout to meet the lighting needs
and the selection of wiring material to meet these
requirements.

2. The selection of a suitable wiring conductor.

3. The selection of lighting fixtures and lamps, and their
and their placement to meet the needs planned.

4. Learning to use and care for the equipment efficiently.

5. Making adjustments in the lamp and beam program, as well
as making the greatest possible use of the
lighting equipment installed in the "B" and "C".

This initial study of the lamp and beam activities should

include an estimate of the present expenditures made in connection

with these practices. The cost of electricity should not be overlooked

a fairly not negligible factor should be compared with the cost of the

present methods being used. Consideration should be given to the fact

that the

1. This is the section which should be made
the first section of the book and the first
and this section with a good review of the
energy. This section should be made

2. This section may be made to include the fact
that there is a great deal of energy in
the world and that energy is being used

This section of the book and the first section should be made

as a basis for making out a lighting program. This section should cover a

period of time in the future. Then a program is outlined in this

section as a guide in making a wiring installation that will allow for

any and increased work of electricity without additional wiring material.

and in providing the most useful equipment for use.

Planning the wiring and lighting layout, the selection of

lighting fixtures and lamps, and the installation, use and care of these

home equipment are a part of the planning that requires specific and technical information. This help should be given as a part of the Agricultural and Home Economics education program, for electricity becomes a part of practically every phase of the existing farm and home practices. Extension workers, teachers, and other groups can make a great contribution to the field of rural electrification by giving direct assistance to farm families on the above problems.

from component parts of the system and negative results are
indicated. This study should be given as a part of the
generalized and from which some ideas may be derived for
the use of a part of the system in the design of a
new system. In general, however, the study is not
a study of the system as a whole but of the parts of the
system which are of interest in the design of a new system.

APPLIANCE RATING AND OPERATING COSTS

Ex.

Object:

- (1) To become familiar with the kilowatt hour meter and its use.
- (2) To become familiar with the rating of different household appliances and to compute the operating cost of individual appliances.
- (3) To compute monthly electric bills.

References:

Use references checked in attached bibliography.

Questions:

1. What information may be found on the name plate of an electric appliance? Of what value is this information to the homemaker in buying and using the appliance?
2. What does the rating of an appliance tell you? What additional information do you need in order to compute the cost of operation? What is the formula for finding the cost of operation?
3. How much can the voltage vary from the rated voltage without producing undesirable results?
4. What size wire would a circuit need to be to carry a roaster rated at 1320 watts, a percolator at 660 watts, and a mixer rated at $1/6$ h.p.? What size fuse? Explain.
5. What wattage appliances may be attached to lighting circuits?

Procedure:

1. Draw the dials of a kilowatt hour meter showing the pointers and their direction of rotation. What is the rule for reading a meter? Read the meter you have sketched.
2. Study the name plates of the appliances in the laboratory, and fill in the chart in appliance rating. Check the accuracy of these ratings by connecting the appliance to the indicating meter board.
 - (a) Check the voltage on which the appliance was designed to operate. Adjust the control on the instrument panel until the voltmeter gives the required voltage reading.

- (b) Read the wattmeter.
 - (c) Adjust the rheostat until the voltmeter reads five volts lower than the voltage designated in the name plate. Read the wattmeter. What affect does low voltage have on the appliance?
- 3. Estimate the number of hours each appliance would be used in the average home and compute the cost of operation at 3¢ per kwh.
 - 4. Make a 5 year plan for buying household electrical equipment for a particular family in your county. In making your plan give consideration to outside uses from the standpoint of both convenience and a means of increasing income. List the equipment in the order you would advise the homemaker to buy.
 - (a) On the basis of this plan, compute the average monthly bill for the first year, using Chart B.
 - (b) Add the remaining appliances in the order you have given and compute the increase in the monthly bill.

Chart A

A STUDY OF APPLIANCE RATING AND COST OF OPERATION

APPLIANCES	VOLTAGE DESIGNED FOR	RATING	WATTAGE USED	COST OF OPERATION AT 2¢ PER KWH	AVERAGE MONTHLY CONSUMPTION	AVERAGE COST OF OPERATION PER MO. AT 2¢ PER KWH
Radio						
Hand Iron						
Ironing Machine						
Toaster						
Mixer						
Percolator						
Waffle Iron						
Heating Pad						
Vacuum Cleaner						
Grill						
Roaster						
Hot Plate						
Others						

ESTIMATED PRESENT EXPENDITURES

EQUIPMENT	FUEL, OIL, ETC., PER MONTH	COST PER MONTH
Lighting Lamps & Lanterns	Kerosene Gal. _____ @ _____ ¢ Gasoline Gal. _____ @ _____ ¢	
Home Electric Plant	Gasoline Gal. _____ @ _____ ¢ Oil Qt. _____ @ _____ ¢ Repair & Batteries	
Water Pump	Gasoline Oil Gal. _____ @ _____ ¢ Qt. _____ @ _____ ¢	
Range & Water Heater	Kerosene Gal. _____ @ _____ ¢ Gasoline Gal. _____ @ _____ ¢ Coal Ton _____ @ \$ _____ Cost of Hauling \$ _____ Wood Cord _____ @ _____ ¢ Cost of Hauling \$ _____ Other Fuels \$ _____	
Refrigerator	Ice Lb. _____ @ _____ ¢ Kerosene Gal. _____ @ _____ ¢	
Radio	Battery Charging & Repair 75¢	
Washing Machine	Gasoline Gal. _____ @ _____ ¢	
Incubator	Kerosene Gal. _____ @ _____ ¢ Coal or Wood	
Brooder	Kerosene Gal. _____ @ _____ ¢ Coal or Wood	
Other Equipment		
	Total Monthly Expenditure	\$

Chart C

COMPUTATION OF MONTHLY ELECTRIC BILL

YOUR LOCAL RATE		APPLIANCES	KWH USED PER MO.	COST
First	_____ kwh @ _____ ¢			
Next	_____ kwh @ _____ ¢			
Next	_____ kwh @ _____ ¢			
Next	_____ kwh @ _____ ¢			
All Over	_____ kwh @ _____ ¢			
Appliances	Avg. kwh Per Mo.			
Household:				
Clock	2			
Coffee Makers	5			
Fan (Household)	2			
Iron	5			
Ironing Machine	10			
Lighting	20			
Radio	8			
Refrigerator	45			
Roaster	50			
Range	145			
Sewing Machine	$\frac{1}{2}$			
Toaster	3			
Vacuum Cleaner	2			
Waffle Iron	2			
Washing Machine	3			
Water Heater	240			
Farm:				
Brooder	$\frac{1}{2}$ kwh per chick, raised			
Incubator	$\frac{1}{2}$ " " " , hatched			
Churner	$1\frac{1}{2}$ " " 100 # butter			
Cream Separator	$\frac{1}{4}$ " " can			
Poultry Light.	5 " - 100 hens			
Water Pump	25"			
		Total monthly cost for all uses \$ Average cost per kwh..... ¢		

PLANNING THE WIRING AND LIGHTING FOR A FARM HOME

Ex.

Object:

- (1) To study the needs for safe, adequate and convenient wiring and lighting for the farm home.
- (2) To plan the wiring and lighting for a farm home showing the placements of outlets and switches.
- (3) Make recommendations for type of fixtures and lamps needed. Make estimate of cost at two price levels.

References:

Use references checked in the attached bibliography.

Procedure:

1. Draw the lay-out of some farm you are familiar with in your county, showing the house, barn, garage and other farm buildings.
2. Plan the wiring and lighting for this home. Consider such factors as present income, type of farming, family needs and living habits, and the possible increase in the use of electricity, as you make this plan. What uses can be made of electricity on the farm? Include in your plan:
 - (a) Kind and size of service entrance.
 - (b) Number and size of house circuits.
 - (c) Number of convenience outlets and switches and the proper placement.
 - (d) Type of light fixtures and lamps needed for good lighting.
 - (e) Method of figuring number and size of house circuits.
3. Show the location of the switches and outlets in your floor plans, using standard wiring symbols.
4. Fill in specification sheets.

WIRING SYMBOLS


























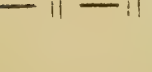

	Ceiling Light Outlet
	Ceiling Light Outlet on Drop Cord
	Wall Light Outlet
	Light with Reflector
	Wall Light with Convenience Outlet in Fixture
	Motor Outlet (show H.P.)
	Special Heavy Duty Outlet
	Ordinary Duplex Convenience Outlet
	Ordinary Single Convenience Outlet
	Floor Convenience Outlet
	Ceiling Convenience Outlet
	Cord Connector on Drop Cord
	Radio Antenna and Ground Outlet
	Single Convenience Outlet with Switch
	Water Proof Convenience Outlet for Out of Doors
	Single Pole Switch
	Three Way Switch
	Four Way Switch
	Switch with Pilot Light
	Automatic Door Switch
	Weather Proof Switch
	Bell
	Service Entrance
	Fuse Panel
	Branch Circuits - Ceiling and wall lights and receptacles
	Branch Circuits - Appliances
	Range Circuit
	Water Heater Circuit

Chart B

LIGHTING SPECIFICATIONS

House	Height of Ceiling and Floor Space	Color of Ceiling	Color of Wall	Type of fixture recommended	Portable lamps and place of use recommended	Changes in interior decorating recommended
Front porch						
First floor hall						
Living room						
Dining room						
Kitchen						
Pantry						
Dinette						
2nd floor hall						
Bath						
Bedroom No. 1						
" " 2						
" " 3						
" " 4						
Closets						
Attic						
Basement						
Laundry						
Back porch						

LIGHTING EQUIPMENT FOR THE FARM AND FARM HOME

THIS LEAFLET illustrates the latest approved types of low-cost lamps and fixtures which include the principle of shaded light. This is not a catalog. It is merely a collection of suggestions to assist in the selection of better lighting equipment for the farm and farm home. Consult with your local dealers and distributors to make certain that they handle low-cost fixtures of the types indicated

RURAL ELECTRIFICATION ADMINISTRATION

281-U-11-38

FOR THE FARM ➡

RLM DOME REFLECTORS direct the light downward where it is needed. They are made in many sizes by many manufacturers—12-inch diameter with 100-watt inside frost bulb is commonly used in farm outbuildings



SHALLOW DOME REFLECTORS are preferable for farm outbuildings having very low ceilings. They give wider spread of light downward but give less protection from glare than the RLM dome—12-inch diameter with 100-watt inside frost bulb is commonly used

BOWL REFLECTORS in several sizes to fit 75-to-200-watt bulbs are useful where intense light is needed for close work. They are usually hung directly over workbenches and similar places where light is most needed



ANGLE REFLECTORS may be mounted on the wall of a building, either inside or outside, to concentrate the light in one direction. Sizes to fit 75-to-200-watt bulbs are available

The above reflectors may be had in vaporproof units with a heavy glass globe which protects the bulb from breeches and eliminates igniting dust or chaff. Note the fitter for attaching each reflector to the socket

HANDY FLOODLIGHTS are useful for out doorlighting of anything from a roadside stand to a lawn party. These practical and decorative lights are available in 100- and 200-watt sizes with a lens of weatherproofed and doors having clear, red, blue, green, and amber glass



BRACKET LIGHTS made of a weather-proof reflector and a conduit gooseneck

can be conveniently mounted on a vinepost or the corner of the house or barn. Care should be taken to have the assembly weatherproof and mounted at least 15 feet above the ground

A **REEL OR PULLEY** to handle an extension cord greatly increases the convenience of a portable light in the barn, silo, or workshop. The light can be raised or lowered easily without damaging the cord



SOCKETS OR LAMP HOLDERS for use in outbuildings should be made of porcelain to protect against corrosion, shock, and fire. Since reflectors improve your lighting, your sockets should be the type to which a reflector can be attached

FOR THE HOME ➡

FRONT PORCH

BACK PORCH

HALLWAYS

LIVING ROOM



Decorative ceiling globe
60-watt bulb—
about \$1.50



Lantern for wall or ceiling
60-watt bulb—
about \$2.25



Ceiling lantern
two 40-watt
bulbs—about \$3



Plain glass globe
60-watt bulb—
about 50 cents



Weatherproof
Bracket light—
100-watt bulb—
about \$1.35



Orb ceiling globe
60-watt bulb—
about \$1.95



Glass lantern-
shaped shade
60-watt bulb—
about 50 cents



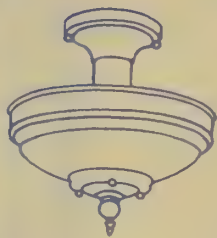
Modern dome light
two 60-watt bulbs—
about \$2.75



Decorative ivory globe
75-watt bulb—about \$5



Indirect
100-150-watt
silver bowl
bulb—about
\$1.25



Indirect
at least
100-watt
bulb—
about \$6.50



I. E. S. three-lite
floorlamp
100-200-300-
watt bulb—
about \$10



Uses
Four 40-watt
bulbs—about
\$10



I. E. S. Junior
Floorlamp
(for 3-lite bulb—
about \$6) for
100-watt
bulb—about \$5



I. E. S. Study
and Reading
Lamp
100-watt
bulb—
about \$2



I. E. S. Lamp
attached to desk
or table
100-watt
bulb—about
\$5.50



I. E. S.
three-lite
floorlamp
100-200-
300-watt
bulb—
about \$7



Pin-it-up
with
diffusing
bowl
75-watt
bulb—
about
\$4

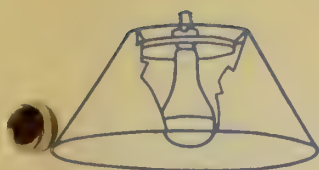


I. E. S. end
table lamp
100-watt
bulb—about
\$6

LOWER PRICE

MEDIUM PRICE

UPPER PRICE



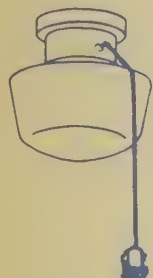
Indirect
100-150-watt silver
bowl bulb—about
\$1.70



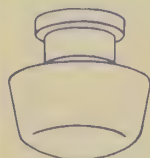
Pendant fixture for five
40-60-watt bulbs—
about \$9



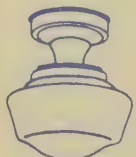
Three-lite indirect
100-200-300-watt
bulb—about
\$14



Glass diffusing globe
10 to 12 inches in di-
ameter for 100-200-
watt bulb—about,
\$1.75



Opal glass diffusing
globe 8 to 12 inches in
diameter for 75-200-
watt bulb—about \$2



Glass diffusing globe
8 inches in diameter—
75-watt bulb—about
\$1.25



Crystal top diffusing globe
75-200-watt bulb—about
\$3.50



Shaded bracket
60-watt bulb—
about \$2



Keyless Socket
Porcelain—
about 25 cents each



Keyless Socket
Porcelain—
about 25 cents each,



Keyless Socket
Porcelain—
about 25 cents each



Indirect 100-watt
silver bowl
bulb—about
75 cents



Painted glass globe
75-watt bulb—
about \$1.25



Ceiling
fixture
75-watt
bulb—
about
\$3.75

Pin-it-up
with cone diffuser
75-watt bulb—
about \$1



Pair of pin-it-ups
75-watt bulb—
about \$3



Pin-it-up
with diffusing bowl
75-watt bulb—
about \$3.50



Pair
vanity
lamps
60-watt
bulbs—
about
\$2.50
a pair



Opal ceiling globe
75-watt bulb—
about \$1



Crystal top
diffusing globe
ceiling
100-watt
bulb—about
\$2.25



Wall bracket for 60-watt
bulb—about
\$5 a pair

LOWER PRICE

MEDIUM PRICE

UPPER PRICE

DINING ROOM

KITCHEN

CLOSETS-CELLARS

BED ROOM

BATH ROOM

MODERNIZERS - - -

FOR THIS OLD LAMP



A converter like this with 100-watt bulb turns old lamps into new—about \$2.50

FOR THIS



For bulbs (40-60 watts) burned base down—The Candle-ette with a bowl underneath each small shade—about 85 cents each

AND THIS



For bulbs (40-60 watts inside frost or silver bowl) burned base up—individual cones—about 15 cents each

FOR THIS GLARING BRIDGE LAMP



An adapter as shown or a silver bowl bulb (75 or 100 watts) and shade with reflector top (about \$1) or a bridge shader combining the advantages of a good shade and a diffuser—about \$1.50 to \$3.50

FOR THE DINING ROOM



LEFT—Attractive modern indirect lighting fixture—parchment shade—about \$4. Complete with hanger about \$6

RIGHT—Indirect lighting for about \$2—with this 150-watt silver bowl bulb underneath a broad shade with reflector top

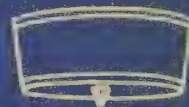
FOR THIS UNSIGHTLY FIXTURE



TRY



OR
A PARCHMENT DRUM



Small individual shades (10 to 50 cents each) to cover the bulb (25 or 40 watts) or a parchment drum to cover the whole fixture—about \$4

FOR DROP CORDS AND BARE CEILING LAMPS



These fixtures are easy to install. Screw them into a light socket just like any lamp bulb. Those in parchment and plastic are attractive and well designed to provide good lighting very inexpensively—from 25 cents to \$3.50.



PLANNING THE ELECTRIC FARM KITCHEN

Ex.

Object:

To plan for the best use of electricity in the farm kitchen, through the study and application of the fundamentals of kitchen planning as applied to -

- (1) A new farm kitchen.
- (2) A remodeled farm kitchen.

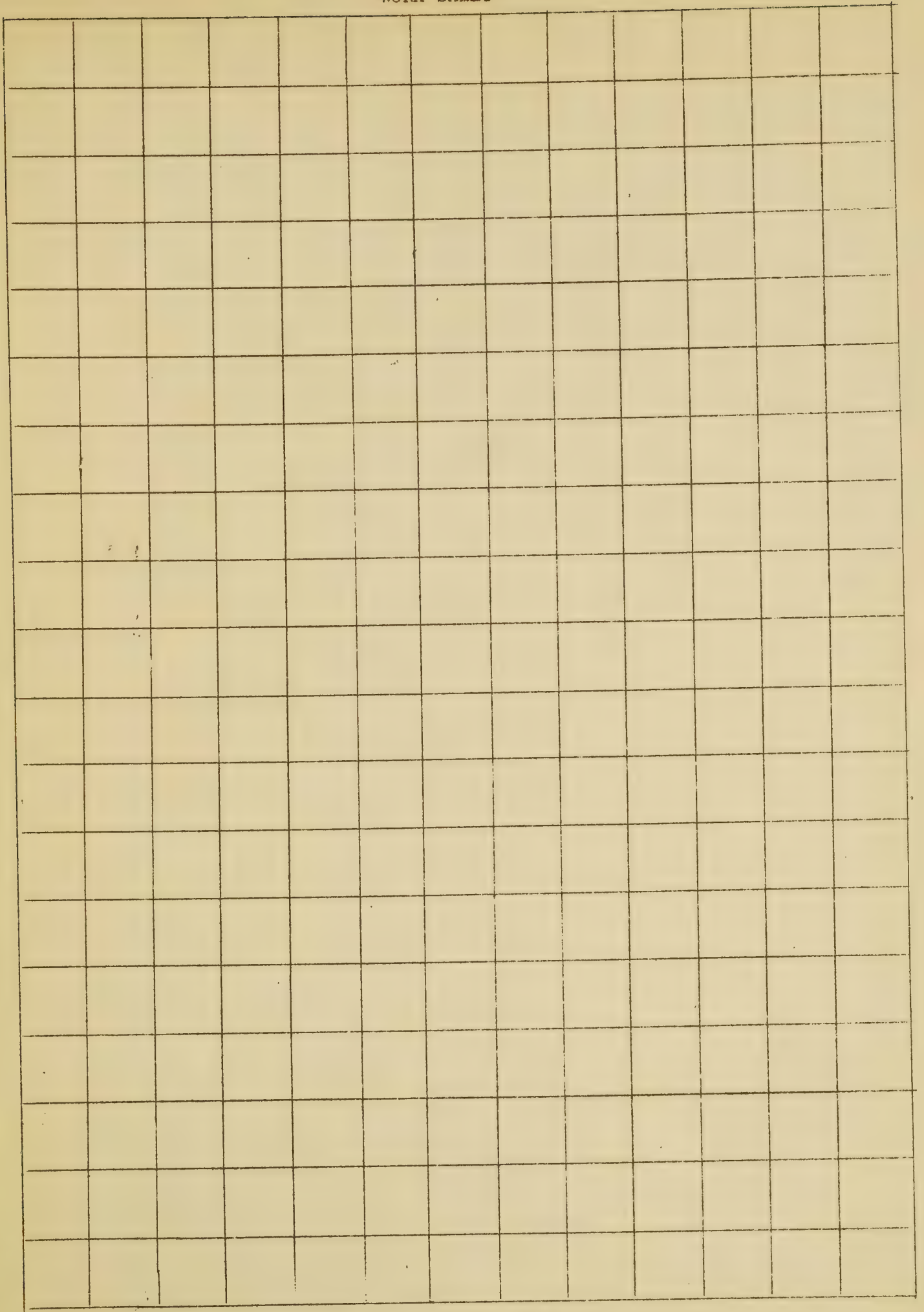
References:

Use references checked in the attached bibliography.

Procedure:

1. Draw a floor plan which you think will fit the needs of a particular family in your county. With a set of kitchen blocks show good arrangement of the equipment.
2. Draw floor plan of a particular farm kitchen in your county that needs to be remodeled. With the family needs and the amount of money that can be expended in mind, make a plan for remodeling this kitchen over a period of three to five years. With a set of kitchen blocks set up this kitchen showing the installation of electrical equipment and other changes you would make each year.
3. From the remodeled kitchen you have set up, draw complete floor and wall plans.

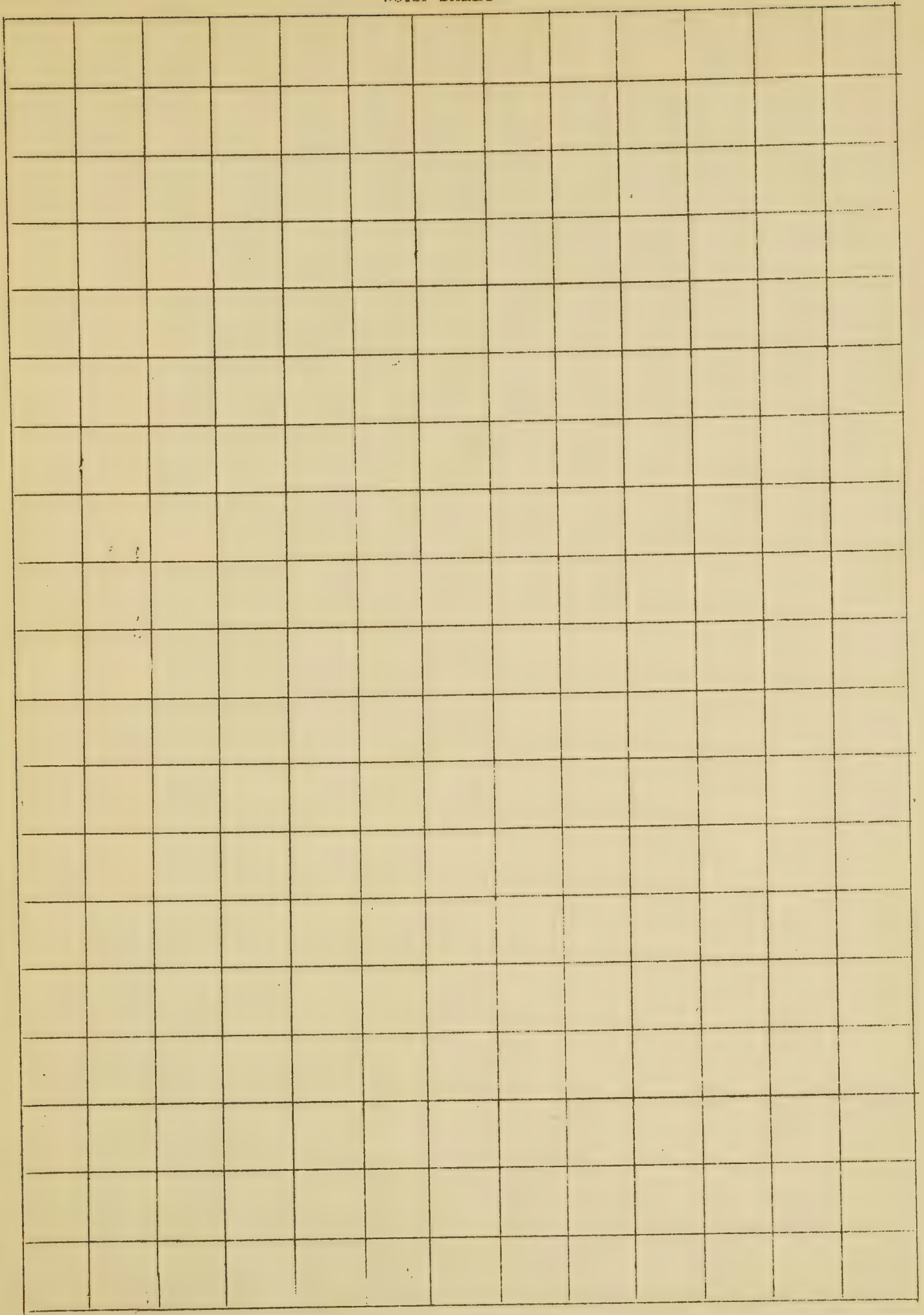
WORK SHEET



One square - one foot

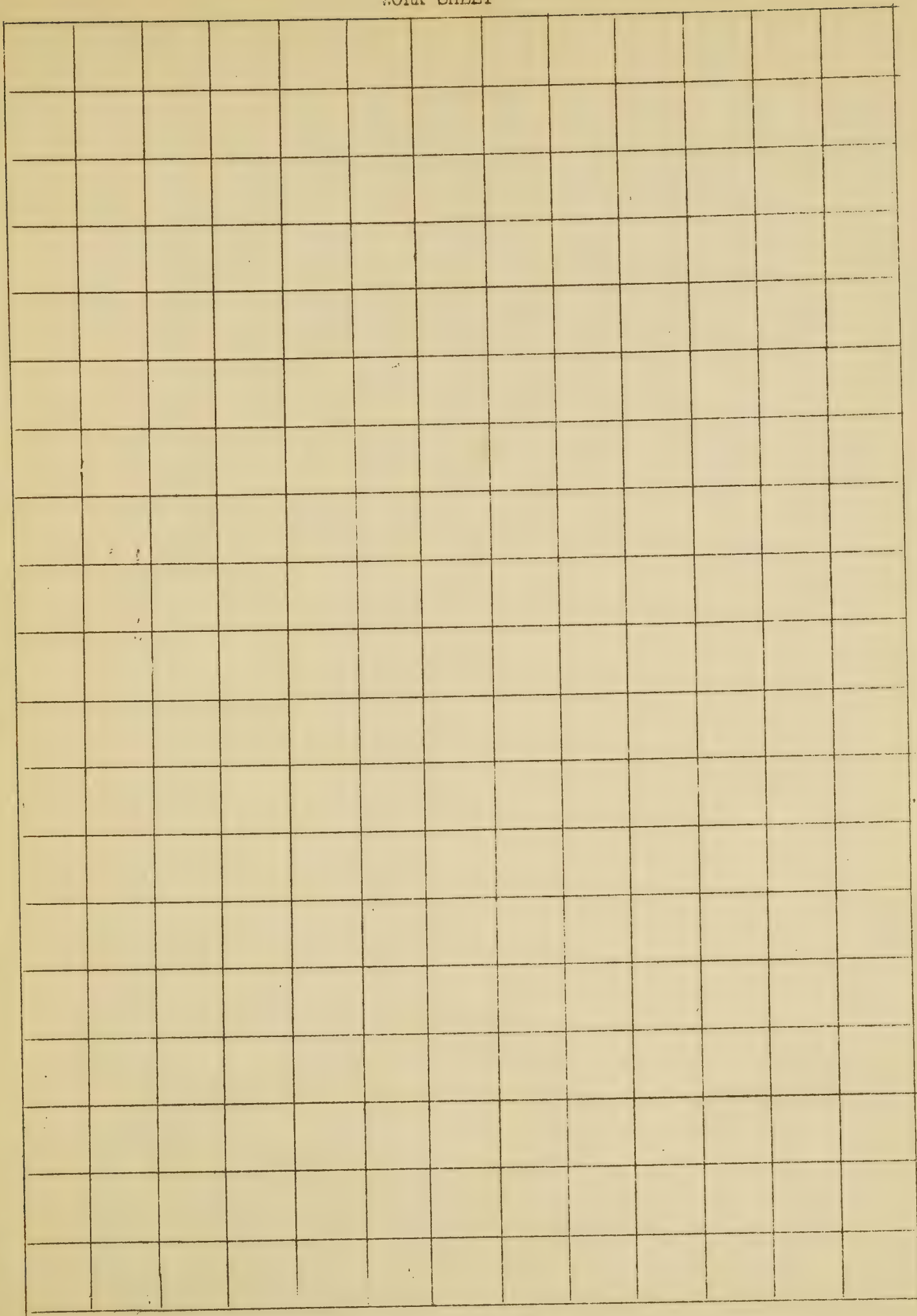


WORK SHEET



One square - one foot

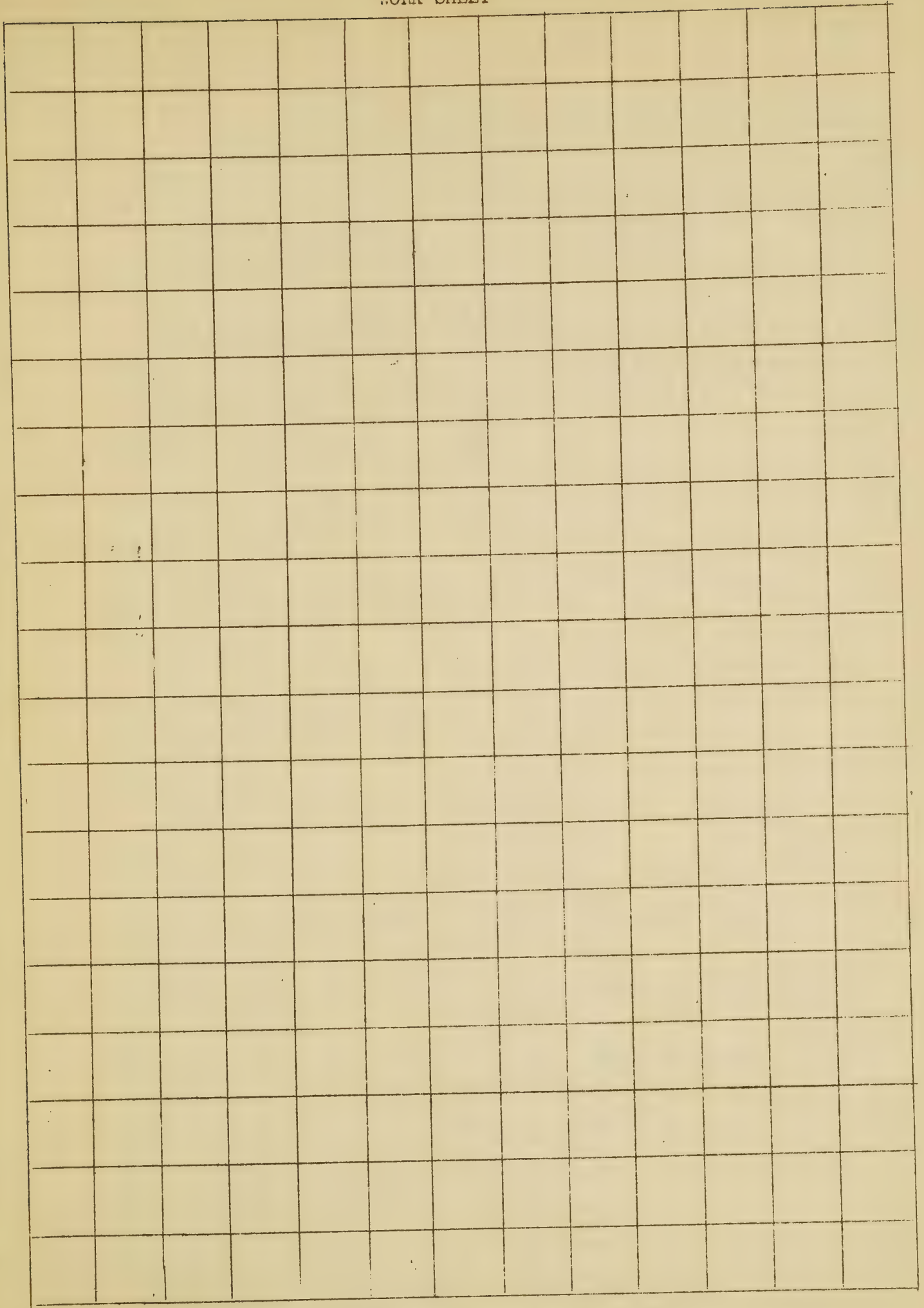
WORK SHEET



One square - one foot



WORK SHEET



One square - one foot

WASHING MACHINES

Ex.

Object:

- (1) To study the selection, use and care of the different types of washing machines on the market.
- (2) To observe through use, features of construction which effect efficient and convenient use.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types of washing machines in the laboratory, using the following outline:

A. Selection:

Compare three or more different models, using the attached data sheet.

B. Operation:

1. Outline the laundry methods, step by step, which you would recommend to a farm homemaker.
2. Select two types of washing machines. Following the steps in the washing process which you have outlined, wash the equivalent of an average farm family washing in one machine and rinse in the other.
3. During the use of these machines observe the following factors:
 - (a) Note the capacity of the tub. Is this adequate for the average farm family?
 - (b) Is the water line well marked and easily seen?
 - (c) Is the motor controlled by a switch?

WASHING MACHINES

- (d) Note the water action in the different types.
Is it a strong or mild action?
- (e) Are the controls located for convenience and ease of operation?
- (f) What type of rolls does the wringer type have?
Is the pressure adjusted automatically, or manually?
- (g) Is the drainboard self-reversing?
- (h) Is the safety release automatic? If manually controlled, is it located where it may be reached from all sides of the tub?
- (i) Note the means for safety on the spinner drier.
- (j) How are the tubs drained? Do you feel the convenience of the pump is worth the additional cost to the farm homemaker?
- (k) Does the tub drain easily? Is it easy to clean?
- (l) Note the type casters used on the machine. Can the machine be rolled easily when loaded?
- (m) Is the height adjustable?

C. Care:

What care should be given to washing machines?

WASHING MACHINES DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. PRICE			
4. ELECTRIC RATING			
a. VOLTS			
b. H. P.			
5. TYPE OF WASHER			
a. GYRATOR			
b. VACUUM CUP			
6. CAPACITY			
a. POUNDS OF CLOTHES			
b. GALLONS OF WATER			
7. CONTROLS CONVENIENTLY LOCATED AND EASY TO OPERATE			
8. MOTOR CONTROLLED BY SWITCH			
9. MATERIAL OF TUB			
10. TUB EASILY CLEANED			
11. WATER LINE EASILY SEEN			
12. TYPE OF WATER EXTRACTOR			
a. WRINGER			
b. SPINNER DRIER			
13. TYPE OF WRINGER ROLLS			
14. TYPE OF PRESSURE REGULATION OF ROLLS			
15. DRAINBOARD SELF-REVERSING			
16. TYPE OF SAFETY RELEASE ON WRINGER			
17. TYPE OF DRAIN			
18. LEGS ADJUSTABLE			
19. MOTOR SEALED IN, OR OPEN			
20. FREQUENCY OF OILING RECOMMENDED BY MANUFACTURER			

IRONS

Ex.

Object:

To study the selection and use of the electric iron.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types of irons in the laboratory, using the following outlines:

A. Selection:

Compare three or more different types and models, using the attached data sheet.

B. Operation:

Iron linen, cotton and rayon garments with varying moisture contents (follow methods given on Sheet B - Laundry Ex.) using a 6 pound - 660 wattage rating and a 3 - 3 3/4 pound - 1000 wattage rating. During the use of these irons observe the following factors:

- (a) Size and weight of the iron used on each garment. Note the ironing time for each.
- (b) Was the dial for adjusting the heat on the thermostatically controlled iron marked with the names of the materials, or High, Medium and Low? Was there an Off position?
- (c) What are the advantages of the thermostatically controlled iron?
- (d) What were your observations in using the different weight irons of different wattages?
- (e) Is heavy pressure necessary in the average household ironing? Explain.

IRONS

- (f) Observe type and construction of the cords.
What are the advantages of the permanently attached cord?
- (g) Was the handle well shaped, heat resistant and comfortable to hold?
- (h) Note size and finish of sole plates of the different irons.
- (i) Was there a safety rest?

IRONS DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. ELECTRIC RATING			
a. VOLTS			
b. WATTS			
4. SIZE			
a. WEIGHT			
b. LENGTH AND WIDTH OF SOLE PLATE (APPROX. NO. SQ. IN. IRONING AREA)			
c. SHAPE AND FINISH OF SOLE PLATE			
d. BEVELED EDGES			
5. HANDLE			
a. HEAT-RESISTANT MATERIAL			
b. DESIGNED TO FIT HAND			
6. ATTACHED HEEL REST			
7. TYPE OF ARM			
a. NON-AUTOMATIC OR AUTOMATIC			
b. HOW IS DIAL FOR ADJUST- ING HEAT MARKED?			
8. PERMANENTLY ATTACHED CORD OR DETACHABLE			

IRONING MACHINES

Ex.

Object:

- (1) To become familiar with the different types of ironing machines on the market.
- (2) To observe through use, features of construction which effect efficient and convenient use.

References:

Use references checked in the attached bibliography.

Procedure:

Study the⁴ different types and models of ironing machines in the laboratory, using the following outline:

A. Selection:

Compare three or more different models, using the attached data sheet.

B. Operation:

1. Iron several flat pieces, shirt and a dress, on each of the ironers in the laboratory.
2. During the use of these ironers, observe the following factors:
 - (a) Are the motor and heating element separately controlled?
 - (b) Is the ironer thermostatically controlled? By one thermostat, or two?
 - (c) Is there any advantage in having each end of the shoe separately controlled?
 - (d) Does the rotary have one or two open ends?
 - (e) Is there a mechanical safety release on the rotary type? Is it easily reached?
 - (f) Which type of control do you find most convenient to use on the rotary type: Knee, foot, or fingertip?

- (g) Are the controls easily used, and do they operate instantly?
- (h) Is the machine equipped with a pressure lever?
- (i) Can the shoe be thrown far enough back from the roll or board to allow for easy cleaning?
- (j) Is the height a comfortable one? Is there ample knee room?
- (k) Is the shoe well insulated?
- (l) Is the board or roll padded well? Can padding and covers be removed easily?
- (m) Can the machine be moved around easily?

C. Care:

What care should be given to ironing machines?

IRONING MACHINE DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. ELEC. RATING			
a. VOLTS			
b. H.P., OR			
c. WATTS			
4. TYPE OF IRONER			
a. PRESS-BOARD			
b. ROTARY			
5. THERMOSTATICALLY CONTROLLED (BY ONE OR TWO THERMOSTATS)			
6. CONTROLS OPERATED BY:			
a. KNEE			
b. FOOT			
c. FINGERTIP			
7. CONTROLS CONVENIENTLY LOCATED			
8. NO OPEN ENDS ON ROTARY TYPE			
9. SAFETY RELEASE EASILY REACHED AND OPERATED			
10. ENOUGH SPACE BETWEEN SHOE AND ROLL TO PERMIT EASE OF CLEANING			
11. MATERIAL OF SHOE			
12. LENGTH AND WIDTH OF SHOE			
13. SHOE WELL INSULATED			
14. ROLL OR BOARD WELL PADDED			
15. PADDING AND COVERS EASILY REMOVED			
16. MACHINE EASILY MOVED			
17. AMPLE KNEE ROOM			
18. SPACE REQUIRED FOR STORING			

REFRIGERATORS

Ex.

Object:

- (1) To study the selection, operation and care of the different types of electric household refrigerators on the market.
- (2) To observe through the use of the refrigerators, features of construction and other factors that effect efficient and convenient use.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types of refrigerators in the laboratory, using the following outline.

A. Selection:

Compare three or more different models using the attached data sheet.

B. Operation:

1. Select two refrigerators for laboratory work. From the group work chart, select the classes of foods you want to prepare and store in the refrigerators. From the following recipes select an ice cream and an ice or sherbet and prepare according to direction. Before starting to work turn cold control to fast freezing. Why? Note the time required to mix and freeze these desserts.
2. During the use of the refrigerators observe the following factors, and note results:
 - (a) Note the size of the motors in the different size refrigerators in the laboratory. Where are they located? Are they sealed-in or not?
 - (b) Note the sizes of the refrigerators in the laboratory. What is minimum number of cubic feet you would recommend for the average farm family in your county?

- (c) Observe very closely the construction of the refrigerators in the laboratory, including type and thickness of insulation, and the design of the interior. Are the racks placed to give a maximum of food storage, and will they accommodate different size containers?
- (d) After the above observations, list the points you would give the farm homemaker to use as a guide in purchasing a refrigerator.
- (e) Observe the condition of the various foods that have been stored in the refrigerators in the laboratory for three days. Why should most foods be covered?
- (f) What is the chief factor to be considered in the placement of food in the refrigerator?
- (g) How often should the refrigerator be defrosted? Why?
- (h) Make an outline of the suggestions for the economical use of the refrigerator that you would give to a new user.
- (i) What factors effect the texture of a frozen product in the electric refrigerator? How many of these factors do your recipes include?

REFRIGERATORS DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. PRICE			
4. ELECTRIC RATING			
a. VOLTS			
b. H. P.			
5. MOTOR SEALED-IN OR OPEN			
6. SIZE			
a. NUMBER CU. FT.			
7. FINISH			
a. LACQUER OR			
b. PORCELAIN ENAMEL			
c. DIFFERENCE IN PRICE OF FINISH			
d. ACID RESISTANT			
8. INSULATION			
a. TYPE			
b. THICKNESS			
9. SHELVES			
a. SLIDE OR STATIONARY			
b. MOVABLE			
c. RIBBON AND ROUND BARS			
10. ROUNDED CORNERS INTERIOR AND EXTERIOR			
11. PROVISION FOR FAST FREEZING			
12. PROVISION FOR DEFROSTING			
13. FREEZING TRAYS EASILY REMOVED			
14. DOOR EASILY OPENED AND CLOSED			
15. WELL FITTED GASKET AROUND DOORS			
16. RIGHT OR LEFT HAND OPENING			
17. QUIET OPERATION			
18. SPECIAL FEATURES			
LIST			

RECIPES

Plain Ice Cream
(Serves 8-10)

$\frac{1}{2}$ c. sugar	2 c. top milk
$\frac{1}{2}$ c. light corn syrup	2 c. light cream
4 eggs	2 tsp. vanilla

For uncooked ice cream, beat the egg whites until stiff, add one tablespoon of sugar for each white, beating to a meringue. Add yolks, sugar and syrup to the milk and cream, beat until well blended, and then fold in the beaten whites.

Pour into freezing tray. Set cold control to coldest position for freezing. Freeze mixture to mushy stage. Remove to chilled bowl, and beat until light and creamy. Return to tray and finish freezing.

For a cooked base, scald the milk with the sugar and syrup, before adding the slightly beaten egg yolks. Continue to cook while stirring for five minutes and chill, add cream, then fold in the egg whites. Cool, add vanilla and follow directions given above for freezing.

Variations of the Foundation Recipe:

Chocolate: Add 4 squares of melted unsweetened chocolate to cooked custard base.

Coffee: Substitute $\frac{1}{2}$ c. strong coffee for $\frac{1}{2}$ c. of the cream.

Peppermint: Use $\frac{1}{4}$ lb. crushed peppermint stick candy instead of the sugar.

Burnt Almond: Melt 8 tsp. sugar carefully and stir in $\frac{1}{2}$ c. chopped almonds. Heat until almonds are browned. Crush and add to custard. Flavor with vanilla and a few drops of almond extract.

Lemon Ice Cream
(Serves 6)

2 eggs	$1\frac{1}{2}$ c. milk
$\frac{1}{2}$ c. sugar	$\frac{1}{2}$ c. heavy cream
$\frac{1}{2}$ c. light corn syrup	$\frac{1}{4}$ c. lemon juice
1 tsp. grated lemon rind	

Beat eggs until very light. Add sugar gradually, beating until mixture is rather thick. Combine with corn syrup, milk, cream,

lemon juice and rind. Pour into freezing tray of automatic refrigerator.

Set cold control to coldest position for freezing. Freeze mixture to mushy stage. Remove to chilled bowl, and beat until light and creamy. Return to tray and finish freezing.

Cantaloupe Ice Cream
(Serves 8)

2 c. cantaloupe pulp	1 c. coffee cream
$\frac{1}{2}$ c. sugar	1 egg beaten lemon color
Juice of $\frac{1}{2}$ lemon	$\frac{1}{2}$ c. sugar
1 c. whipping cream	

Put cantaloupe through food chopper, add $\frac{1}{2}$ c. sugar and lemon juice. Beat egg until lemon colored, and add $\frac{1}{2}$ c. sugar. Fold into cantaloupe and add coffee cream. Freeze to a mush consistency and fold in cream whipped to a soft custard consistency. Complete freezing.

Orange Ice
(Serves 8)

$1\frac{1}{2}$ c. sugar	2 tsp. gelatin
1 c. water	$2\frac{1}{2}$ c. orange juice
2 orange rinds, grated	2 tbsp. lemon juice

Place sugar and water in a sauce pan and let come to the boiling point. Add grated rind and boil 3 minutes. Remove from heating unit and add gelatin which has been soaked in 2 tbsp. of cold water. Cool, add lemon and orange juice. Freeze to mushy stage. Remove to chilled bowl and beat quickly with rotary beater. Return to tray and finish freezing.

Lemon Milk Sherbet
(Serves 6)

$1\frac{1}{4}$ c. sugar	1 pt. milk
$\frac{1}{3}$ c. lemon juice	$\frac{1}{4}$ tsp. lemon extract
1 lemon rind, grated	Dash salt
2 egg whites, beaten	

Combine sugar, lemon juice and rind. Add milk and stir until sugar is thoroughly dissolved. Freeze to the mushy stage. Remove to chilled bowl and beat quickly. Fold egg whites (beaten to just hold shape) and return to tray and finish freezing.

Peach Mousse
(Serves 4-6)

1 c. double cream	2 egg whites
1 c. peach pulp	1/16 tsp. salt
5 tbsp. sugar	

Whip the cream. Peel and slice ripe peaches, and rub enough through coarse strainer to make 1 cup of pulp. Add the sugar, and fold quickly into the cream before the peaches discolor. Add the egg whites, which have been beaten with the salt, pour into a tray or mold, and freeze. Fresh apricot or plum pulp may be substituted for the peach.

Raspberry Parfait
(Serves 6)

1/2 c. raspberry juice	1/2 c. canned (or fresh)
2 tbsp. sugar	raspberries
2 egg whites, beaten stiff	1 c. whipping cream
1/8 tsp. salt	

Boil raspberry juice and sugar until syrup forms thread from the spoon. Add the hot syrup slowly to the stiffly beaten egg whites. Add crushed raspberries and fold in the whipped cream. Pour into trays and freeze without stirring.

RANGES

Ex.

Object:

1. To become familiar with the different type ranges on the market.
2. To observe through use, features of construction which effect efficient and convenient use.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types of ranges in the laboratory, using the following outline:

A. Selection:

Compare the different types, using the attached data sheet.

B. Operation:

1. Select one range to work with. From the attached food chart select one oven meal, one well-cooker meal, one vegetable for surface cookery, and one meat for broiling. Follow manufacturer's direction for preparation and cooking. Before starting to work note size and wattage of oven. Size and wattage of surface units and well-cooker.
2. During the use of the range observe the following factors:
 - a. Note design and general construction of range. Is the frame of rigid construction with few mechanical fastenings? Is the top of acid resisting porcelain enamel? Is the range of a comfortable height?
 - b. Ranges may be had with different arrangement of surface units. What arrangement is most convenient for you?
 - c. Are the surface units open or enclosed? What are the chief advantages of the enclosed units?

- d. Suitable utensils are essential if the range is to be used efficiently. Why? Explain. Give the chief characteristics of good utensils for surface cookery. For oven cookery.
- e. List the different uses of the well-cooker. Could the well-cooker be used to an advantage in the average farm home in your county? Figure the cost of cooking your well-cooker meal, using a 2¢ rate.
- f. Is it possible to cook food faster when the switch is turned to High than when turned to Low? Explain.
- g. Will the racks in the oven pull out easily when loaded? Does the oven door fit closely? Note type of temperature control and location. Where is the vent located? Why is vent necessary?
- h. Is the starting with a cold oven as satisfactory as starting with one preheated for most foods? Explain.
- i. What are the chief advantages of cooking whole meals in the oven?
- j. Outline the suggestions you would make to a new user for economical use of the electric oven. What rules would you give her for planning oven meals?
- k. Did you use a time control clock? Do you feel that it is a desirable feature for the farm homemaker? Explain.
- l. Using a 2¢ rate, figure cost of cooking your oven meal.
- m. Was the broiler you used large enough to accommodate a farm family of six? Can other foods be heated under the rack while the meat is broiling? Is it necessary to broil with the door partially open? Explain.
- n. What size range would best suit the cooking needs of the average farm family in your county?

C. Care:

What care should be given the electric range? Explain in brief outline.

1. MANUFACTURER			
2. MODEL NUMBER			
3. ELECTRIC RATING			
a. VOLT			
b. WATTS (TOTAL)			
4. PRICE			
5. SURFACE FINISH			
a. ACID-RESISTING PORCELAIN ENAMEL			
6. CONSTRUCTION:			
a. STURDY CONSTRUCTION OF LEGS AND FRAME			
b. ROUNDED CORNERS			
c. FEW MECHANICAL FASTENINGS			
7. HEIGHT OF RANGE			
8. SURFACE UNITS:			
a. WELL COOKER			
b. NUMBER OF OTHER UNITS			
c. DIAMETER OF EACH			
d. WATTAGE OF EACH			
e. OPEN OR ENCLOSED			
OVEN:			
a. NUMBER OF UNITS (1) WATTAGE FOR PREHEAT (2) " " BAKE (3) " " BROILING			
b. UNITS IN WELL CONSTRUCTED FRAME			
c. UNITS EASILY REMOVABLE			
d. MATERIAL OF LINING			
e. SIZE OF OVEN			
f. RACKS (1) SLIDE EASILY (2) RIGID CONSTRUCTION			
g. INSULATION-TYPE AND THICKNESS			
h. LOCATION OF VENT			
i. LOCATION OF THERMOSTAT			
j. DOOR, WELL FITTED AND WITH TYPE TENSION SPRING TO KEEP IN ANY POSITION DESIRED			
9. SWITCHES:			
a. NO. HEAT POSITIONS			
b. LOCATION OF SWITCH MARKINGS			
10. SPECIAL FEATURES (LIST)			

ROASTERS

Ex.

Object:

- (1) To study the selection, operation and care of the different electric roasters on the market.
- (2) To determine, through use, the extent that they may be used to bring some of the advantages of electric cookery into farm homes.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different roasters in the laboratory, using the following outline:

A. Selection:

Compare the different roasters in the laboratory, using the attached data sheet.

B. Operation:

1. Select one roaster to work with. From the attached food chart select from one class the foods you wish to cook in the roaster. Follow manufacturer's directions.
2. During the use of the roaster observe the following factors:
 - (a) Size and shape of roaster. What is the wattage rating? Is it thermostatically controlled? What are the advantages of cooking with controlled temperatures?
 - (b) Is bottom so insulated supporting surface will not be damaged from undue heating?
 - (c) Note size and material of the inset pans. Could other pans be used in the roaster you are using?

- (d) Are the handles and legs of heat resistant material?
- (e) Is there a vent in the lid? Is a vent necessary? Explain.
- (f) Can the roaster be equipped with a broiling unit? What is the wattage of this unit? Would the average family use this unit to any great extent?
- (g) Is the rack equipped with handles for removing hot foods easily?
- (h) Figure the cost of the food you cooked, using a rate of 2¢ per KWH.
- (i) To what extent does the roaster meet the cooking needs of the average farm family in your county?

Care:

What care should be given to electric roasters?

ROASTERS DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. PRICE			
4. ELECTRIC RATING			
a. VOLTS			
b. WATTS			
5. SHAPE			
a. OVAL			
b. RECTANGULAR			
6. SIZE			
a. NUMBER CU. IN.			
7. BOTTOM WELL INSULATED TO PREVENT UNDUE HEATING OF SUPPORTING SURFACE			
8. HEAT RESISTANT HANDLES AND LEGS			
9. VENT IN LID			
10. RACKS WITH GOOD HANDLES			
11. MATERIAL OF INSET PANS			
a. ALUMINUM			
b. ENAMEL			
c. GLASS			
12. THERMOSTATICALLY CONTROLLED			
13. FINISH			
a. EXTERIOR			
b. INTERIOR			
14. COLOR			

MIXING MACHINES

Ex.

Object:

To study the selection, operation and care of the different types of mixers on the market.

Procedure:

Study the different types of mixing machines in the laboratory, using the following outline.

A. Selection:

Compare three or more different models, using the attached data sheet.

B. Operation:

1. Select two different types of mixers, and mix a standard butter cake or white cake in one, and mash potatoes and whip cream in the other, following manufacturer's directions.
2. Use three of the attachments, following manufacturer's directions.
3. In using these mixers observe the following factors:
 - (a) Size of motor? Permanently fixed or detachable?
 - (b) Is the switch easily reached? Is motor hinged to allow bowls to be moved in or out easily?
 - (c) Number speeds of motor? Note if there is steady, full power on each speed when mixing foods of different consistencies.
 - (d) Note type of design of beaters. Do they operate close enough to bottom of bowl to catch all food? Are beaters easy to attach? Detach?
 - (e) Note material, design and capacity of bowls.

MIXING MACHINES

- (f) Does the mixer have double action? Does the platform revolve easily? Can it be removed easily?
- (g) Note material and finish of mixer. Is it durable and easily cleaned?
- (h) Is the motor quiet in operation?
- (i) Why is careful timing necessary to obtain good results, particularly in mixing batters and doughs?
- (j) What attachments do you feel the average farm family is justified in purchasing?

C. Care:

What care should be given a mixer?

MIXING MACHINE DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. PRICE			
4. ELECTRIC RATING			
a. VOLTS			
b. H. P. OR			
c. AMPERES			
5. TYPE OF MIXER			
a. WALL OR TABLE MODEL			
6. SPACE REQUIRED FOR MIXER			
7. MOTOR			
a. DETACHABLE OR NOT			
b. SPEEDS			
c. IS IT DESIGNED TO CARRY LOAD FOR WHICH IT IS PURCHASED?			
d. IS THERE FULL POWER AT ALL SPEEDS?			
e. SWITCH CONVENIENTLY LOCATED?			
f. MOTOR HINGED TO ALLOW BOWLS TO BE MOVED IN AND OUT EASILY			
8. MATERIAL AND SIZE OF BOWLS			
9. MATERIAL AND FINISH OF MIXER			
10. MIXER EASILY HANDLED AND EASILY CLEANED			
11. BEATERS EASY TO ATTACH AND DETACH			
12. REVOLVING PLATFORM			
13. NUMBER ATTACHMENTS SOLD WITH MIXER			
14. RUBBER COVERED CORD			
15. SPACE REQUIRED FOR MIXER			

RECIPES

Standard Butter Cake

$\frac{1}{2}$ c. shortening	3 tsp. baking powder
1 c. sugar	$\frac{1}{4}$ tsp. salt
2 unbeaten eggs	$\frac{3}{4}$ c. milk
2 c. cake flour	1 tsp. vanilla flavoring

1. Follow mixer method exactly.
2. Assemble and measure all ingredients: put shortening in large mixer bowl, sugar in cup, broken eggs in a small bowl; sift flour, measure and add baking powder and salt; measure milk and add flavoring to it.
3. Cream shortening 1 minute, high speed.
4. Add sugar gradually over a 2 minute period, mixer still at high speed. Use rubber scraper frequently.
5. Continue creaming 2 minutes at high speed, scraping bowl several times. (Flour can be sifted twice more and pans greased during this time.)
6. Stop motor, scrape bowl and beaters. Add whole eggs, start mixer slowly until yolks are broken (to prevent splattering), then immediately increase speed to high and beat one minute for each egg.
7. Reduce speed to low. Add $\frac{1}{3}$ of the flour mixture and $\frac{1}{3}$ of the liquid. Mix only until all flour disappears (about 40 seconds), then add another $\frac{1}{3}$ of the flour and milk. Mix another 40 seconds and add the final thirds. After all flour has been mixed into the batter continue the mixing on low speed for another 2 minutes.
8. Bake in two 8-inch layer pans 25 to 30 minutes at 375° F. Turn layers out on wire rack and cool.
9. Slice and compare texture and volume with cakes prepared in other mixers. Note results.

RECIPES

White Cake

3 egg whites	3 tsp. baking powder
$1\frac{1}{4}$ c. sugar	$\frac{1}{2}$ tsp. salt
$\frac{1}{2}$ c. shortening	$\frac{3}{4}$ c. milk
2 c. cake flour	1 tsp. vanilla flavoring

1. Beat egg whites at high speed in small mixer bowl until stiff but not dry. Add 3 tablespoons of the sugar and beat a few seconds longer. Set bowl aside. (Beating egg whites first makes it unnecessary to wash beaters during the cake making process.)
2. Use large mixer bowl and follow mixer method for making butter cake, omitting step 6.
3. Fold egg whites into batter by hand or remove the outside beater and mix egg whites into batter with one beater at low speed, using rubber scrape to bring batter toward beater.
4. Bake in two 9-inch layer cake pans 30 minutes at 350° F. Turn layers out on wire rack and cool.
5. Slice and compare texture and volume with cakes prepared in other mixers. Note results.

Mashed Potatoes

8 medium sized potatoes	2 to 4 tbsp. butter
$\frac{1}{2}$ c. milk, hot	or margarine
Salt and pepper	

1. Cook potatoes in salted water until very tender.
2. Drain and leave uncovered a minute to allow them to dry.
3. Turn potatoes into large mixer bowl which has been warmed or remove mixer from stand and beat potatoes in pan. Beat at low or medium speed until smooth and creamy.
4. Using low speed, add hot milk, butter and seasonings. Beat until light.
5. Compare with potatoes mashed in other mixers. Note results.

VACUUM CLEANERS

Ex.

Object:

- (1) To study the selection, operation and care of the different types of vacuum cleaners on the market.
- (2) To observe through use, features of construction which effect efficient and convenient use.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types in the laboratory, using the following outline:

A. Selection:

Compare the different types using the attached data sheet.

B. Operation:

1. Select two different types of cleaners for this experiment, and follow directions given in Sheet D - Experiments 1 and 2.
2. During the use of these cleaners, observe the following factors:
 - (a) Note size of motor and type of cleaner. What differences did you note in cleaning action of the two types of cleaners?
 - (b) Is the switch conveniently located?
 - (c) Note the type and location of control for changing handle positions. Which type did you find most convenient? How many handle positions did you find in the different cleaners?

VACUUM CLEANERS

- (d) Are the nozzles adjustable? Are there any advantages in having them adjustable? Explain.
- (e) Is there a provision for brush adjustment? Are there any advantages in having several adjustments? Explain.
- (f) Is the cleaner designed for working under low furniture and in corners?
- (g) Can the machine be moved around easily?
- (h) Is the cord of durable material? What length is it?
- (i) Note size of the bag. Is it easy to remove and easy to empty?
- (j) Number of attachments that come with cleaner? Are they easy to attach and detach?
- (k) List other attachments that may be purchased. How many attachments do you feel the average farm homemaker needs?

C. Care:

What care should be given to vacuum cleaners?

VACUUM CLEANERS DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. PRICE			
4. ELECTRIC RATING			
a. VOLTS			
b. H. P. OR			
c. AMPERES			
5. SWITCH CONVENIENTLY LOCATED			
6. TYPE AND LOCATION OF CONTROL FOR CHANGING HANDLE POSITION			
7. CLEANER EASILY MOVED			
8. BAG			
a. SIZE			
b. EASY TO REMOVE AND ATTACH			
c. EASILY CLEANED			
9. TYPE OF CLEANER			
a. STRAIGHT AIR SUCTION			
b. MOTOR DRIVEN BRUSH			
c. MOTOR DRIVEN AGITATOR			
10. CAN CLEANER BE USED UNDER LOW FURNITURE AND IN CORNER			
11. BRUSHES PROVIDED WITH ADJUSTMENTS			
12. LENGTH AND MATERIAL OF CORD			
13. DUSTING ATTACHMENTS			
a. NUMBER THAT COMES WITH CLEANER			
b. EASY TO USE			
14. SPECIAL FEATURES LIST			

COFFEE MAKERS

Ex.

Object:

To study selection, operation and care of the different types of coffee makers on the market.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types in the laboratory, using the following outline:

A. Selection:

Compare three or more different types, using the attached data sheet.

B. Operation:

1. Select two types of coffee makers -- a percolator and vacuum type, and make coffee according to manufacturer's directions. During the use of these, observe the following factors and note results.
 - (a) Capacity of the coffee maker.
 - (b) Sturdy construction, well balanced with broad enough base to prevent tipping over.
 - (c) Finish of the exterior and interior.
 - (d) Location of heating element in percolator.
 - (e) Protective device -- automatic cut-out or fuse.
 - (f) Thermostatic control.
 - (g) Length of time required to make coffee of medium strength in each type. Compare flavor.
 - (h) Non-dripping spout or faucet.

COFFEE MAKERS

- (i) Handles and feet of heat resistant material.
- (j) Base well insulated to protect surface on which it is used.
- (k) Durable cord.
- (l) Terminal studs well protected for safety and good service.

C. Care:

1. Observe ease of cleaning of the coffee makers you used.
2. What care should be given coffee makers?

COFFEE MAKERS DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. ELEC. RATING			
A. VOLTS			
B. WATTS			
4. TYPE			
A. PERCOLATOR			
B. VACUUM			
C. DRIP POT			
5. FINISH			
A. EXTERIOR			
B. INTERIOR			
6. CAPACITY			
7. THERMOSTATIC CONTROL			
8. PROTECTIVE DEVICE			
A. AUTOMATIC CUT-OUT OR FUSE			
9. WELL BALANCED (NOT EASILY TIPPED OVER)			
10. HEAT RESISTANT HANDLE			
11. WELL INSULATED BASE			
12. BASE DESIGNED NOT TO MAR SURFACE			

TOASTERS

Ex.

Object:

To study selection, operation and care of the different types of toasters on the market.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types in the laboratory, using the following outline:

A. Selection:

Compare three or more different types, using the attached data sheet.

B. Operation:

1. Toast white and whole wheat bread ($1/3$ to $1/2$ inch in thickness) in the different type toasters. Observe the following factors during the use of the toasters and note results.
 - (a) Time required to toast bread on both sides.
 - (b) Evenness of browning on both sides.
 - (c) Type and accuracy of the thermostat.
 - (d) Is the base of toaster insulated to prevent undue heating of the surface on which it is used, and are the feet of a smooth, heat resisting material?
2. Prepare and toast sandwiches in sandwich toaster, following manufacturer's directions. Observe whether expansion hinges permit toasting of sandwiches of varying thickness. Observe time for preheating, time for toasting sandwiches, and evenness of browning. Note results.

C. Care:

1. Observe ease of cleaning of the toasters you used.
2. What care should be given a toaster?

TOASTERS DATA SHEET

[illegible]

WAFFLE BAKERS

Ex.

Object:

- (1) To become familiar with the different types of waffle bakers on the market.
- (2) To observe through use, features of construction which effect efficient and convenient use.

References:

Use references checked in the attached bibliography.

Procedure:

Study the different types of waffle bakers in the laboratory, using the following outline:

A. Selection:

Compare three or more different models, using the attached data sheet.

B. Operation:

1. From the following recipes select two types of recipes (plain and sweet) and prepare according to directions.
2. Before starting to work, see if waffle baker has been seasoned. Why is seasoning necessary? Give directions for seasoning.
3. In using the waffle bakers observe and note results on:
 - (a) Time of preheating.
 - (b) Ease of operation -- automatic and semi-automatic types.
 - (c) Length of baking period and evenness of browning -- plain and sweet waffles.
 - (d) Size and depth of knobs on the grids, and distances apart. What influence would this have on the waffles?

WAFFLE BAKERS

4. What are the possible causes of waffles sticking?
5. Low temperature and a longer baking time is required for cake mixtures and those containing fruit. Why is this true?

C. Care:

What care should be given to waffle bakers?

WAFFLE BAKERS DATA SHEET

1. MANUFACTURER			
2. MODEL NUMBER			
3. COST			
4. ELEC. RATING			
A. VOLTS			
B. WATTS			
5. SIZE AND SHAPE			
A. DIAMETER OF GRIDS			
B. SHAPE OF GRIDS			
6. TEMPERATURE CONTROL			
A. AUTOMATIC			
B. NON-AUTOMATIC			
7. MATERIALS			
A. CHROMIUM OR NICKEL PLATED			
B. VITREOUS CHINA			
C. ALUMINUM GRIDS			
D. HANDLE AND FEET HEAT RESISTING			
8. CONSTRUCTION			
A. WELL BALANCED WHEN OPEN			
B. EDGES SMOOTH AND WELL FINISHED			
C. FEET DESIGNED NOT TO SCRATCH SUPPORTING SURFACE			
D. TRAY TO CATCH DRIPPINGS			
E. BUILT IN OR DETACHABLE CORD			

RECIPES

Brownies

2 eggs	$\frac{1}{2}$ c. chopped nuts
1 c. sugar	$\frac{1}{2}$ tsp. vanilla
2 squares chocolate	$\frac{1}{4}$ tsp. salt
1 c. flour	$\frac{1}{2}$ c. shortening
	($\frac{1}{2}$ butter and $\frac{1}{2}$ other fat)

Melt chocolate and add fat. Beat eggs and combine with sugar. Add chocolate, sifted flour with salt, vanilla and nuts. This makes a stiff batter. Preheat waffle baker and put 1 tbsp. of batter in each section of the grid. (Chocolate mixtures require a low baking temperature.) Bake for 4 to 5 minutes. If the baker is non-automatic, it may be necessary to disconnect the iron several times during the baking process, in order to maintain a sufficiently low temperature. Serve with whipped cream or ice cream.

Fresh Fruit Short Cake

2 c. flour	2 eggs
4 tbsp. sugar	$\frac{3}{4}$ c. milk
4 tsp. baking powder	$\frac{1}{2}$ tsp. salt
6 tbsp. shortening	

Sift dry ingredients together. Work in shortening, add beaten eggs and milk. Preheat waffle baker to the same temperature as for plain waffles. Drop a tbsp. of batter on each grid. Bake 3 to 4 minutes. Spread waffle with creamed butter and sugar, cover with sweetened fruit. Add second waffle, more crushed fruit. Cut into four sections, and top each with whipped cream or ice cream.

Gingerbread

$\frac{1}{3}$ c. butter	$2\frac{3}{4}$ c. sifted flour
$\frac{2}{3}$ c. boiling water	$\frac{1}{2}$ tsp. soda
1 c. molasses	1 tsp. cinnamon
1 egg	1 tsp. ginger
$\frac{1}{2}$ c. sugar	$\frac{1}{4}$ tsp. cloves
$\frac{1}{4}$ tsp. salt	

Pour boiling water over butter, add molasses and well beaten egg. Sift dry ingredients and combine with liquid mixture. Preheat waffle baker. Add batter and bake from 3 to 4 minutes. Serve with whipped cream or ice cream.

RECIPES

Plain Waffles

1-3/4 c. flour	2 eggs, beat whites
3 tsp. baking powder	separately
1/2 tsp. salt	1 1/4 c. milk
1 tbsp. sugar	4 tbsp. shortening
	(6 if butter is used)

Sift and mix dry ingredients together. Mix milk and beaten egg yolks. Bring the two mixtures together and stir until the batter is smooth. Then add shortening (melted). Fold in stiffly beaten egg whites. Preheat waffle baker and put 1 tbsp. batter on each section of grid and bake.

Cornmeal Waffles

1-3/4 c. meal	1/3 c. cooking oil
1/4 c. flour	or melted fat
2 eggs	1 tsp. salt
1/4 tsp. soda	1 1/4 to 1 1/2 c. butter-
2 tsp. baking powder	milk

Sift salt and meal together. Beat eggs, add buttermilk and shortening. Combine with sifted meal and salt. Sift flour, soda and baking powder together, and add to the other mixture. Cook immediately. Preheat waffle baker and put 1 tbsp. batter on each section of grid and bake.

Date Sponge Cake

5 eggs	1/4 tsp. salt
1 c. sugar	1/2 c. chopped nuts
1 c. flour	1 1/2 c. chopped dates
1 tsp. baking powder	6 tbsp. melted butter

Beat egg yolks until light, and add sugar gradually. Combine flour, baking powder, dates and nuts, and add to egg yolks. Add melted butter and fold in stiffly beaten egg whites. Preheat waffle baker and put 1 tbsp. of batter in each section of grid and bake approximately 3 minutes. Serve with whipped cream or ice cream.

SIMPLE HOUSEHOLD ELECTRICAL REPAIRS

Ex.

Object:

1. To study the care of electrical equipment and how to keep it serviceable and safe.
2. To develop a technique in making small electrical repairs.

References:

Use references checked in the attached bibliography.

Questions:

1. What do you feel are the chief causes of trouble in the use of electrical household equipment?
2. What do you understand by a short circuit?
3. What are the two main results of a short circuit or a loose connection ~~within an appliance~~ or in the terminal connections of the portable leads?

Procedure:

1. Renew a connector plug and an attachment plug and splice a lamp cord, following the directions given below:
 - a. Attachment plug
 - (1) Cut off the end of the wire using either a pair of wire pliers or a sharp knife. Pliers are best for this purpose but a knife may be used if pliers are not available.
 - (2) Slip the plug over the end of the cord. If the two strands of wire are wrapped together remove 1-1/2 to 3 inches of the outer covering of the cord, depending on the type of plug used. The bowl-type plug without neck requires more, as sufficient length is needed to tie a knot.
 - (3) If wire pliers are used, crush about one inch of the insulation on the end of each wire and remove. If a knife is used, cut the insulation away from the wire at an angle as in sharpening a pencil. Care should be used when removing the insulation with a knife

not to cut any of the strands of the wire. Each cut strand decreases the diameter of the wire and, hence, its carrying capacity.

- (4) Scrape the wire clean with the blade of the knife. Twist the wires to form a smooth tight cable (be careful not to twist wires tight enough to break them).
- (5) Wrap the cut end of the insulation with thread or rubber tape to keep it from fraying.
- (6) If the plug is of the bowl-type without neck, tie a knot and tape the knot. Pull the knot down into the plug receptacle, and wrap the end of the wires around the two terminal screws. Wrap the wire in the direction the screw turns when being tightened, and be certain there are no loose ends which may come in contact with other wire. Turn the screws down tightly and the cord is ready for use.

b. Connector plug

- (1) In repairing iron plugs (and lamp sockets) the ends of the wires are prepared in the same manner as described above. After the wires are connected to the contact clamps, fit cord and clamps in the path defined in the plug. Reassemble the shell. When your wiring is completed, check your connections by attaching a light bulb and an electric iron.

c. Splices

- (1) Cut the cord at the break or cut new ends when joining two cords.
- (2) Remove $\frac{1}{4}$ inches of the outer insulation from each end.
- (3) Stagger the joints by cutting $1\frac{1}{2}$ inches off the end of one wire of each cord.
- (4) Remove $1\frac{1}{2}$ inches of insulation from each wire for a soldered joint or 2 inches for a twisted joint.
- (5) Scrape the ends of the wires clean and twist the strands together tightly into a small cable.
- (6) Wrap one wire around the other 5 or 6 turns for a twisted joint.

- (7) Wrap each wire with a layer of rubber tape (splicing compound), stretching the compound as it is wrapped around the wire.
 - (8) Cover each wire with a layer of friction tape. Put on a fine layer of friction tape over both wires starting well over on the outer braid of the cord.
- 2. Outline the procedure you would follow in locating trouble when lamps and appliances fail to work.
 - 3. Outline the points you would give a new user on the safe use of electricity in the home.

U.S. Rural electrification admin.
A handbook of work plans for
the use of electricity in the
farm home. n.d.

Date

Borrower's name

NATIONAL AGRICULTURAL LIBRARY



1022848702